Glossary

access control list (ACL) — A list of security identifiers that are contained by a resource object. Only those processes with the appropriate access token can activate the services of that object.

access token — Objects containing the security identifier of an active process. These tokens determine the security context of the process.

account lockout policy — Defines the conditions that result in a user account being locked out.

activating Windows — A new Microsoft requirement to prevent software piracy by registering installations of Windows XP with the signature of its supporting hardware.

active (marked active) — The status of a primary partition that indicates to the computer's BIOS that it hosts the necessary files to boot an operating system.

Active Directory — A centralized resource and security management, administration, and control mechanism used to support and maintain a Windows XP domain. The Active Directory is hosted by domain controllers.

active partition — The partition the computer uses to boot.

Address Resolution Protocol (ARP) — The IP protocol used to resolve numeric IP addresses into their MAC layer physical address equivalents.

Administrator — The Windows XP account designed to perform a full array of management functions. This is the most powerful account possible within the Windows XP environment.

Advanced RISC Computing (ARC) pathname — Naming convention used in the Boot.ini file to define the particular hard disk and partition where Windows XP operating system files reside.

alert — A watchdog that informs you when a counter crosses a defined threshold. An alert is an automated attendant looking for high or low values, and can consist of one or more counter/instance-based alert definitions.

answer file — A text file, also called a response file, that contains a set of instructions for installing Windows XP.

applet — A tool or utility found in the Control Panel that typically has a single focused purpose or function.

Application log — Records application events, alerts, and system messages.

application programming interface (API) — A set of software routines referenced by an application to access underlying application services.

architecture — The layout of operating system components and their relationships.

audit policy — Defines the events that are recorded in the Security log of the Event Viewer.

auditing — The process of tracking events by recording selected types of events in the Security log.

authentication — The process of validating a user's credentials to allow access to certain resources.

Author Mode — The condition of a console that allows users to add and remove snap-ins, create new windows, view the entire console tree, and save new versions of the console.

backup type — A backup configuration that determines how often data is backed up and how old and new files are handled. The types of backups are copy, daily, differential, incremental, and normal.

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Backup utility — The tool built in to Windows XP that enables users to back up and restore their data and system configurations in case of a hardware or software failure.

base priority — The lowest priority that a thread may be assigned, based on the priority assigned to its process.

baseline — A definition of what a normal load looks like on a computer system; it provides a point of comparison against which you can measure future system behavior.

basic storage — The drive division method that employs partitions.

bindery — The database used by versions of NetWare before 4.0 to store network resource configuration information.

binding — The process of developing a stack by linking together network services and protocols. The binding facility allows users to define exactly how network services operate for optimal network performance.

BIOS (basic input/output system) — A special PC ROM chip that contains sufficient program code to let a computer perform a POST routine, to check its hardware components, and to operate basic input and output routines for keyboard or mouse input, and screen output.

boot loader — The software that shows all operating systems currently available and, through a menu, permits the user to choose which one should be booted.

boot partition — The partition that hosts the main Windows XP system files and is the initial default location for the paging file. The boot partition can be the same partition as the system partition or it can be any other partition (or logical drive in an extended partition) on any drive hosted by the computer.

boot phase — Any of a number of stages in the Windows XP boot process, starting with the POST, through initial startup activities, to activation of a boot loader program, to selection of the operating system (or version) to boot, to

hardware detection (Ntdetect), to selecting a configuration.

boot process — The process of bringing up a completely functional computer, starting from initial power-up (or reboot) through the boot phases and load phases involved in starting the hardware, finding a boot loader, and then loading and initializing an operating system.

boot selection menu — The list of bootable operating systems (or versions) that Boot.ini provides for display at the end of the Windows XP boot phase.

Boot.ini — The text file that creates the Windows XP boot loader's menu.

bottleneck — A system resource or device that limits a system's performance. Ideally, the user should be the bottleneck on a system, not any hardware or software component.

bound application — An application capable of running in a virtual DOS machine.

certificate — An electronic identity verification mechanism. Certificates are assigned to a client or server by a Certificate Authority. When communications begin, each side of the transmission can decide to either trust the other party based on their certificate and continue the communications or not to trust and terminate communications.

characterization data file — The file responsible for rendering the GDI commands into DDI commands that can be sent to the printer. Each graphics driver renders a different printer language.

child process — A process spawned within the context of some Windows XP environment subsystems (Win32, OS/2, or POSIX) that inherits operating characteristics from its parent subsystem and access characteristics from the permissions associated with the account that requested it to be launched.

clean installation — The installation method in which an OS is installed without regard for preexisting operating systems. In other words, all settings and configurations are set to the OS defaults.

client — A computer used to access network resources.

client application — An application or service that creates print jobs for output, which can be either end-user-originated or created by a print server itself (See also *print client*).

Client Service for NetWare (CSNW) — Service included with Windows XP Professional that provides easy connection to NetWare servers.

cluster — A group of one or more sectors into a single non-divisible unit.

Common Internet File System (CIFS) — An enhanced version of SMB used for file and print services.

complementary metal–oxide semiconductor (CMOS) — A special, battery-powered chip that can store not only the software necessary to conduct the POST, but also the basic, nonvolatile configuration information that POST uses to check the RAM installed in a system, the number and type of hard drives, the type of keyboard and mouse, and so forth.

Computer Information File (CIF) — A detailed collection of all information related to the hardware and software products that comprise your computer (and even your entire network).

connecting to a printer — The negotiation of a connection to a shared printer through the Browser service from a client or service across the network to the machine where the shared printer resides.

connection-oriented — A class of network transport protocols that includes guaranteed delivery, explicit acknowledgement of data receipt, and a variety of data integrity checks to ensure reliable transmission and reception of data across a network. Although reliable, connection-oriented protocols can be slow because of the overhead and extra communication.

connectionless — A class of network transport protocols that makes only a "best-effort" attempt at delivery, and that includes no explicit mechanisms to guarantee delivery or data integrity. Because such protocols need not be particularly reliable, they are often much faster and require less overhead than connection-oriented protocols.

console — The collection of snap-ins and extensions saved as an .msc file loaded into the MMC that offers administrative controls.

context — The collection of Registry values and runtime environment variables in which a process or thread is currently running.

context switch — The act of unloading the context information for one process and replacing it with the information for another, when the new process comes to the foreground.

Control Panel — The collection of tools and utilities (called applets) within Windows, where most system- and hardware-level installation and configuration take place.

control set — A special set of Registry values that describes a startup configuration of a computer running Windows XP that is saved each time a Windows machine is shut down (as the current configuration) and each time a user successfully logs on for the first time after bootup (as the Last Known Good Configuration).

cooperative multitasking — A computing environment in which the individual application maintains control over the duration that its threads use operating time on the CPU.

copy backup — A method of backing up all selected files without marking them as being backed up.

counter (or **performance counter)** — A named aspect or activity that the Performance tool uses to measure or monitor some aspect of a registered system or application object.

Counter log — A log that records measurements on selected counters at regular, defined intervals. Counter logs allow you to define exactly which counters are recorded (based on computer, object, counter, and instance).

creating a printer — Setting up a printer for local use.

critical section — In operating system terminology, this refers to a section of code that can be accessed only by a single thread at any one time, to prevent uncertain results from occurring when multiple threads attempt to change or access values included in that code at the same time.

daily backup — A method of backing up only the selected files that have been created or modified on the day that the backup is being performed. They are not marked as being backed up.

Data Link Control (DLC) — A network transport protocol that allows connectivity to mainframes, printers, and servers running Remote Program Load software.

data type — The format in which print jobs are sent to the spooler. Some data types are ready for printing (RAW) and some require further preparation (EMF). Also refers to the setting on a Registry value entry that defines the data format of the stored information.

defragmentation — The process of reorganizing files so that they are stored contiguously and no gaps are left between files.

demand paging — The act of requesting free pages of memory from RAM for an active application.

device — A physical component, either internal or external to the computer, that is used to perform a specific function. Devices include hard drives, video cards, network interface cards, printers, etc.

Device Driver Interface (DDI) — A specific code component that handles the translation of generic print commands into device-specific equivalents, immediately prior to delivery of a spool file to a print device.

differential backup — A method of backing up selected files that have been created or modified since the last full backup. They are not marked as being backed up.

direct–attached printer — A print device attached directly to a computer, usually through a parallel port. See also *network interface printer*.

disabled — The state of a user account, which is retained on the system but cannot be used to logon.

disk bottleneck — A system bottleneck caused by a limitation in a computer's disk subsystem, such as a slow drive or controller, or a heavier load than the system can handle.

Disk Management — The MMC snap-in used to manage drives.

disk quota — A feature in Windows that allows you to limit the amount of disk space that can be consumed by a user.

Distributed File System (DFS) — Combines shared resources from various locations throughout a network into a single hierarchical system.

DMA (Direct Memory Access) — A channel used by a hardware device to access memory directly, i.e., bypassing the CPU. Windows XP supports eight DMA channels, numbered 0 to 7.

domain — A collection of computers with centrally managed security and activities.

domain controller (DC) — A computer that maintains the domain's Active Directory, which stores all information and relationships about users, groups, policies, computers, and resources. It also authenticates domain logons and maintains the security policies and the account database for a domain.

domain model — The networking setup in which there is centralized administrative and security control. One or more servers are dedicated to the task of controlling the domain by providing access and authentication for shared domain resources to member computers.

Domain Name Service (DNS) — TCP/IP service that is used to resolve names to IP addresses.

domain security — The control of user accounts, group memberships, and resource access for all members of a network instead of for only a single computer.

domain user account — A user account that can be used throughout a domain.

DOS operating environment — A general term used to describe the reasonably thorough DOS emulation capabilities provided in a Windows XP virtual DOS machine (VDM).

DOS prompt — The common name for the command-line window available from DOS and Windows.

Dr. Watson — An application error debugger. This diagnostic tool detects application failures and logs diagnostic details.

drive letter — One of two methods of accessing formatted volumes under Windows XP. A drive letter can be assigned to a partition or volume or a drive configuration of multiple components.

driver — A software element that is used by an operating system to control a device. Drivers are usually device-specific.

dual–boot system — A computer that is configured to use two operating systems.

Dynamic Data Exchange (DDE) — A method of interprocess communication within the Windows operating system.

Dynamic Host Configuration Protocol (DHCP) — An IP-based address management service that permits clients to obtain IP addresses from a DHCP server. This allows network administrators to control and manage IP addresses centrally, rather than on a per-machine basis.

dynamic link library (DLL) — A collection of virtual procedure calls, also called procedure stubs, that provide a well-defined way for applications to call on services or server processes within the Win32 environment. DLLs have been a consistent aspect of Windows since Windows 2.0.

dynamic storage — The drive division method that employs volumes. It is a new standard supported only by Windows XP and Windows 2000.

Encrypted File System (EFS) — A security feature of NTFS under Windows XP that allows files, folders, or entire drives to be encrypted. Once encrypted, only the user account that enabled the encryption has the proper private key to decrypt and access the secured objects.

enhanced metafile (EMF) — Device-independent spool data used to reduce the amount of time spent processing a print job. Once it's queued, EMF data requires additional processing to prepare it for the printer.

environment subsystem — A mini-operating system running within Windows XP that provides an interface between applications and the kernel. Windows XP has three environment subsystems: Win32, OS/2, and POSIX, but only Win32 is required for Windows XP to function.

event — Any significant occurrence in the system or in an application that requires users to be notified or a log entry to be recorded. Types of events include audits, driver failures, user logon, process launching, system shutdown, etc.

Event Viewer — A system utility that displays one of three event logs: System, Security, and Application, wherein logged or audited events appear. The Event Viewer is often the first stop when monitoring a system's performance or seeking evidence of problems, because it is where all unusual or extraordinary system activities and events are recorded.

Executive Services — A set of kernel-mode functions that control security, system I/O, memory management, and other low–level services.

extended partition — A type of partition on a basic disk that can be divided into logical drives. Only a single extended partition can exist on a physical disk. When present, only three primary partitions can exist.

FAT (File Allocation Table) or **FAT16** — The file system used in versions of MS-DOS. Supported in Windows XP in its VFAT form, which adds long filenames and 4 GB file and volume sizes.

FAT32 — The 32-bit enhanced version of FAT introduced by Windows 95 OSR2 that expands the file and volume size of FAT to 32 GB. FAT32 is supported by Windows XP.

FDISK — A DOS utility used to partition a hard disk. The DOS FDISK tool can see and manipulate only primary NTFS partitions; it cannot even view logical drives in an extended partition formatted with NTFS.

file system — The method used to arrange, read, and write files on disk. Windows XP supports the NTFS, FAT, and FAT32 file systems.

File Transfer Protocol (FTP) — The protocol and service that provides TCP/IP-based file transfer to and from remote hosts and confers the ability to navigate and operate within remote file systems.

flush — Forcing the memory-resident copy of the Registry to be written to files stored on the hard drive. A flush occurs at shutdown, when forced by an application, or just after a Registry alteration.

folder redirection — A component of IntelliMirror technologies that uses group policies to place specified user folders on a share on the network.

format — Rewriting the track and sector information on a disk, it removes all data previously on the disk.

fragmentation — The division of a file into two or more parts, where each part is stored in a different location on the hard drive. As the level of fragmentation on a drive increases, the longer it takes for read and write operations to occur.

frame type — One of four available packet structures supported by IPX/SPX and NWLink. The four frame types supported are Ethernet 802.2, Ethernet 802.3, Ethernet II, and Ethernet SNAP.

gateway — A computer that serves as a router, a format translator, or a security filter for an entire network.

global group — A group that exists throughout a domain. A global group can be created only on a Windows Server system.

Graphical Device Interface (GDI) — The portion of the Windows XP operating system responsible for the first step of preparing all graphical output, whether to be sent to a monitor or to the printer.

groups — A named collections of users.

Guest account — One of the least privileged user accounts built into Windows XP.

handle — A programming term that indicates an internal identifier for some kind of system resource, object, or other component that must be accessed by name (or through a pointer). In Task Manager, the number of handles appears on the Performance tab in the Totals pane. A sudden increase in the number of handles, threads, or processes can indicate that an ill-behaved application is running on a system.

hardware abstraction layer (HAL) — One of the few components of the Windows XP architecture that is written in hardware-dependent code. It is designed to protect hardware resources.

Hardware Compatibility List (HCL) — Microsoft's updated list of supported hardware for Windows XP.

hardware profile — A collection of custom device settings used on computers with changing physical components.

hive — A discrete body of Registry keys, subkeys, and values stored in a file.

HKEY_CLASSES_ROOT — This Registry key contains the value entries that control the relationships between file extensions (and therefore file format types) and applications. This key also supports the data used in object linking and embedding (OLE), COM object data, and file-class association data. This key actually points to another Registry key named HKEY_LOCAL_MACHINE\Software\Classes and provides multiple points of access to make itself easily accessible to the operating system itself and to applications that need access to the compatibility information already mentioned.

HKEY_CURRENT_CONFIG — This Registry key contains the value entries that control the currently active hardware profile; its contents are rebuilt each time the system is booted. This key is derived from data stored in the HKEY_LOCAL_MACHINE\System\CurrentControlSet\HardwareProfiles\Current subkey. HKEY_CURRENT_CONFIG exists to provide backward-compatibility with Windows 95/98 applications.

HKEY_CURRENT_USER — This Registry key contains the value entries that define the user environment for the currently logged-on user. This key is built each time a user logs on to the system. The data in this key are derived from the HKEY_USERS key and the Ntuser.dat and Ntuser.man files of a user's profile.

HKEY_LOCAL_MACHINE — This Registry key contains the value entries that control the local computer. This includes hardware devices, device drivers, and various operating system components. The data stored in this key are not dependent on a logged-on user or the applications or processes in use.

HKEY_USERS — This Registry key contains the value entries that define the user environments for all users who have ever logged on to this computer. As a new user logs on to this system, a new subkey is added for that user that is built either from the default profile stored in this key or from the roaming user profile.

HOSTS — A static file placed on members of a network to provide a resolution mechanism between host names and IP addresses.

hot fix — Similar to a service pack, except that a hot fix addresses only one problem, or a small number of problems, and may not be fully tested.

identification — The process of establishing a valid account identity on a Windows XP machine by supplying a correct and working domain name (if necessary) and account name.

imported user account — A local account created by duplicating the name and password of an existing domain account. An imported account can be used only when the Windows XP Professional system is able to communicate with the domain of the original account.

incremental backup — A method of backing up selected files that have been created or modified since the last normal or incremental backup. These files are marked as being backed up.

input locale — A combination language and keyboard layout used to define how data is entered into a computer.

input message queue — A queue for each process maintained by the Win32 subsystem that contains the messages sent to the process from the user, directing its threads to do something.

instance — A selection of a specific object when more than one is present on the monitored system; for example, multiple CPUs or hard drives.

Integrated Services Digital Network (ISDN) — A direct, digital dial-up PSTN Data Link-layer connection that operates at 64KB per channel over regular twisted-pair cable between a subscriber site and a PSTN central office.

IntelliMirror — A set of features within Windows XP that utilizes policies, folder redirection, and the Windows Installer Service (WIS) for backing up and restoring users' data, personalized settings, and applications.

Internet Control Message Protocol (ICMP) — The protocol in the TCP/IP suite that handles communication between devices about network traffic, quality of service, and requests for specific acknowledgments (such as those used in the PING utility).

Internet Printing Protocol (IPP) — A new Windows XP protocol that adds Web support to the print subsystem. IPP allows remote users to submit print jobs for printing, view printer queues, and download print drivers.

Internet Protocol (IP) — The protocol that handles routing and addressing information for the TCP/IP protocol suite, IP provides a simple connectionless transmission that relies on higher layer protocols to establish reliability.

Internetwork Packet Exchange (IPX) — The protocol developed by Novell for its NetWare product. IPX is a routable, connection-oriented protocol similar to TCP/IP but much easier to manage and with lower communication overhead.

Internetwork Packet Exchange/Sequenced Packet Exchange (IPX/SPX) — The name of the two primary protocols developed by Novell for its NetWare network operating system. IPX/SPX is derived from the XNS protocol stack and leans heavily on XNS architecture and functionality. See also *IPX* and *SPX*.

interprocess communication (IPC) — The mechanism that defines a way for internal Windows processes to exchange information.

IPSec (IP Security) — An encrypted communication mechanism for TCP/IP to create protected communication sessions. IPSec is a suite of cryptography-based protection services and security protocols.

I/O port — The section of memory used by the hardware to communicate with the operating system. When an IRQ is used, the system checks the I/O port memory area for additional information about what function is needed by the device. The I/O port is represented by a hexadecimal number.

IRQ (interrupt request) — The interrupt request level that is used to halt CPU operation in favor of the device. Windows supports 16 interrupts, namely IRQ 0 to 15.

Kerberos version 5 — An authentication encryption protocol employed by Windows XP to protect logon credentials.

kernel — The core of the Microsoft Windows XP operating system. It is designed to facilitate all activity within the Executive Services.

kernel mode — Systems running in kernel mode are operating within a shared memory space and with access to hardware. Windows XP Executive Services operates in kernel mode.

key — A top-level division of the Registry. There are five keys in a Windows XP Registry. A key can contain subkeys.

language monitor — The part of the print monitor that sets up bidirectional messaging between the printer and the computer initiating the print job.

Last Known Good Configuration (LKGC) — The control set for Windows XP that is automatically saved by the system in a special set of Registry keys the first time a user logs on successfully to a system immediately after it has booted up. This information provides a safe fallback to use when booting the system the next time, if changes made to the Registry in the interim cause problems with booting (or if changes have been introduced that a user does not want to retain on that system).

Layer Two Tunneling Protocol (L2TP) — A VPN protocol developed by Cisco Systems, Inc. to improve security over Internet links by integrating with IPSec.

LMHOSTS — A file used in Microsoft networks to provide NetBIOS name-to-address resolution.

load phase — The Windows XP load phase begins when the kernel assumes control of the machine, and consists of the following five steps: (1) loading the kernel, (2) initializing the kernel, (3) loading services, (4) starting the Windows XP system, and (5) logging on. All five steps must be completed successfully for a complete load to occur.

Local Computer Policy — A Windows XP security control feature used to define and regulate security-related features and functions.

local groups — A group that exists only on the computer where it was created. A local group can have users and global groups as members.

local procedure call (LPC) — A technique to permit processes to exchange data in the Windows XP runtime environment. LPCs define a rigorous interface to let client programs request services, and to let server programs respond to such requests.

Local Security Policy — The centralized control mechanism that governs password, account lockout, audit, user rights, security options, public key, and IP Security.

local user account — A user account that exists on a single computer.

locked out — The state of a user account that is disabled due to logon attempts that have repeatedly failed.

logon authentication — The requirement to provide a name and password to gain access to the computer.

long file names (LFNs) — Filenames up to 256 characters in length, supported by all file systems under Windows XP.

mailslots — A connectionless version of named pipes; mailslots offer no delivery guarantees, nor do they acknowledge successful receipt of data.

mandatory profile — A user profile that does not retain changes once the user logs out. Mandatory profiles are used to maintain a common desktop environment for users.

Master Boot Record (MBR) — The partition table for a disk, and the code that permits that partition table to be read. A functioning MBR is required to boot a hard disk.

memory bottleneck — A system bottleneck caused by a lack of available physical or virtual memory that results in system slowdown or (in extreme cases) an outright system crash.

Microsoft Management Console (MMC) — The standardized interface into which consoles, snap-ins, and extensions are loaded to perform administrative tasks.

mirrored volume — A drive configuration of a single volume is duplicated onto another volume on a different hard drive. Provides fault tolerance. In Windows NT, a mirror on a drive hosted by a different drive controller was called duplexing, but this distinction is no longer used in Windows XP (Windows .NET Server only).

mismatched document — A document with incompatible printer and page settings (that is, the page settings are impossible to produce given the existing printer settings).

mode — A programming and operational separation of components, functions, and services.

modem (Modulator/Demodulator**)** — A Data-link layer device used to create an analog signal suitable for transmission over telephone lines from a digital data stream. Modern modems also include a command set to negotiate connections and data rates with remote modems and to set their default behavior.

mount point or mounted volume — A new drive-access technique that maps a volume or partition to an empty directory on an NTFS volume or partition.

MS-DOS — One of the most popular character-based operating systems for personal computers. Many DOS concepts are still in use by modern operating systems.

multi-boot system — A computer that hosts two or more operating systems that can be booted by selecting one from a boot menu or boot manager during each bootup.

multiprocessing — The ability to distribute threads among multiple CPUs on the same system.

Multi-Provider Router (MPR) — A file system service that can designate the proper redirector to handle a resource request that does not use UNC naming. The MPR lets applications written to older Microsoft specifications behave as if they used UNC naming. The MPR is able to recognize those UNCs that correspond to defined drive mappings receive copies of the domain security database or Active Directory.

multitasking — Sharing processor time between threads. Multitasking may be preemptive (the operating system may bump one thread if another one really needs access to the processor), or cooperative (one thread retains control of the processor until its turn to use it is over). Windows XP uses preemptive multitasking except in the context of the WOW operating environment, because Windows 3.x applications expect cooperative multitasking.

multithreaded process — A process with more than one thread running at a time.

multithreading — The ability of an operating system and hardware to execute multiple pieces of code (or threads) from a single application simultaneously.

Multiple Universal Naming Convention Provider (MUP) — A Windows XP software component that allows two or more UNC providers (for example, Microsoft networks and NetWare networks) to exist simultaneously. The MUP determines which UNC provider will handle a particular UNC request and forwards the request to that provider.

multiple-user system — An operating system that maintains separate and distinct user accounts for each person.

named pipes — Provides support for a connection-oriented message passing service for clients and servers.

naming convention — A standardized regular method of creating names for objects, users, computers, groups, etc.

NDS tree — The hierarchical representation of the Novell Directory Services database on NetWare 4.0 and higher networks.

NetBIOS Extended User Interface (NetBEUI) — A simple transport program developed to support NetBIOS installations. NetBEUI is not routable, so it is not appropriate for larger networks.

NetBIOS Gateway — A service provided by remote access that allows NetBIOS requests to be forwarded independent of the transport protocol. For example, NetBEUI can be sent over the network via NWLink.

NetBIOS over TCP/IP (NBT) — A network protocol in the TCP/IP stack that provides NetBIOS naming services.

NetWare Core Protocol (NCP) — The protocol used by CSNW to make file and print services requests of NetWare servers.

network adapter (NIC) — Another name for network card; the piece of hardware that enables communication between the computer and the network.

network authentication — The act of connecting to or accessing resources from some other member of the domain network. Network authentication is used to prove that you are a valid member of the domain, that your user account is properly authenticated, and that you have access permissions to perform the requested action.

Network Basic Input/Output System (NetBIOS) — A client/server interprocess communication service developed by IBM in 1985. NetBIOS presents a relatively primitive mechanism for communication in client/server applications, but allows an easy implementation across various Microsoft Windows computers.

network bottleneck — A system bottleneck caused by excessive traffic on the network medium to which a computer is attached, or when the computer itself generates excessive amounts of such traffic.

Network Driver Interface Specification (NDIS) — Microsoft specification that defines parameters for loading more than one protocol on a network adapter.

Network Dynamic Data Exchange (NetDDE) — An interprocess communication mechanism developed by Microsoft to support the distribution of DDE applications over a network.

network interface printer — A print device attached directly to the network medium, usually by means of a built-in network interface integrated within the printer, but sometimes by means of a parallel-attached network printer interface.

network number — The specific network identifier used by IPX for internal and network communication.

new installation — See *clean installation*.

New Technology File System (NTFS) — The high-performance file system supported by Windows XP that offers file-level security, encryption, compression, auditing, and more. Supports volumes up to 16 exabytes theoretically, but Microsoft recommends volumes not exceed 2 terabytes.

normal (or full) backup — A method of backing up all selected files and marking them as being backed up.

Novell Directory Services (NDS) — The hierarchical database used by NetWare 4.0 and higher servers to store network resource object configuration information.

NTFS (New Technology File System) — The preferred file system of Windows XP. Supports file-level security, encryption, compression, auditing, and more. Supports volumes up to 2 TB.

Ntldr — The Windows XP loader program that manages the boot and load phases of Windows XP on a PC.

NTLM (NT LAN Manager) authentication — The authentication mechanism used on Windows NT that is retained by Windows XP for backward compatibility.

NWLink — Microsoft's implementation of Novell's IPX/SPX protocol, used for Microsoft Networking or for facilitating connectivity with Novell networks.

object — Everything within the Windows XP operating environment is an object. Objects include files, folders, shares, printers, processes, etc. See also *performance object*.

Open Datalink Interface (ODI) — Novell's specification for network device communication.

operating system (OS) — Software designed to work directly with hardware to provide a computing environment within which production and entertainment software can execute, and which creates a user interface.

package — The name of the collection of installer files, transforms, and other code components that support automated deployment of Windows programs. This term may also be applied to the .msi files associated with the Microsoft Installer facility used to drive automated installations through the Microsoft Installer itself.

Packet Internet Groper (PING) — An IP-based utility that can be used to check network connectivity or to verify whether a specific host elsewhere on the network can be reached.

page — An individual unit of memory that the Virtual Memory Manager manipulates (moves from RAM to paging file and vice versa).

parent process — The Windows XP environment subsystem that creates a runtime process, and imbues that child process with characteristics associated with that parent's interfaces, capabilities, and runtime requirements.

partition — A space set aside on a disk and assigned a drive letter. A partition can take up all or part of the space on a disk.

partition boot sector — The partition that contains the information the file system uses to access the volume, including a physical description of the disk, the name and version of the operating system files, the bootstrap code, and an instruction that allows the Master Boot Record to find all this information.

password — A unique string of characters that must be provided before a logon or an access is authorized. Passwords are a security measure used to restrict initial access to Windows XP resources.

password policy — Defines the restrictions on passwords.

PC Cards — The modern name of the PCMCIA technology. PC Cards are credit card-sized devices typically used to expand the functionality of notebook or portable computers.

PCMCIA — The older name for the technology now called PC Cards. PCMCIA stands for Personal Computer Memory Card International Association.

peer-to-peer — A type of networking in which each computer can be a client to other computers and act as a server as well.

performance object — A component of the Windows XP Professional system environment; objects range from devices to services to processes.

Plug and Play (PnP) — A technology that allows an operating system to inspect and identify a device, install the correct driver, and enable the device, all without user interaction. Plug and Play simplifies the adding and removing of hardware and can often offer on-the-fly reconfiguration of devices without rebooting.

Point-to-Point Protocol (PPP) — A Network layer transport that provides connectivity over serial or modem lines. PPP can negotiate any transport protocol used by both systems involved in the link and can automatically assign IP, DNS, and gateway addresses when used with TCP/IP.

Point-to-Point Tunneling Protocol (**PPTP**) — Protocol used to connect to corporate networks through the Internet or an ISP.

port — Any physical communication channel to which a modem, direct cable, or other device can be connected to enable a link between two computers.

port monitor — The part of the print monitor that transmits the print job to the print device through the specified port. Port monitors are actually unaware of print devices as such, but only know that something is on the other end of the port.

power-on self test (POST) — The system check performed by all computers when they are turned on.

PPP MultiLink — A capability of remote access to aggregate multiple data streams into one network connection for the purpose of using more than one modem or ISDN channel in a single connection.

preemptive multitasking — A computing environment in which the operating system maintains control over the duration of operating time any thread (a single process of an application) is granted on the CPU.

primary partition — A type of partition on a basic disk that can be marked active. Up to four primary partitions can exist on a physical disk.

print client — A network client machine that transmits print jobs across the network to a printer for spooling and delivery to a designated print device or printer pool.

print device — In everyday language, a piece of equipment that provides output service—in other words, a printer. However, in Microsoft terminology, a printer is a logical service that accepts print jobs and delivers them to some print device for output when that device is ready. Therefore, in Microsoft terminology, a print device is any piece of equipment that can produce output, so this term would also describe a plotter, a fax machine, or a slide printer, as well as a text-oriented output device, such as an HP LaserJet.

print job — The contents of a completely or partially interpreted data file that contains text and control characters that will ultimately be delivered to a print device to be printed, or otherwise rendered in some tangible form.

print processor — Software that works with the printer driver to despool files and make any necessary changes to the data to format it for use with a particular printer. The print processor itself is a PostScript program that understands the format of a document image file and how to print the file to a specific PostScript printer or class of printers.

print provider — The server-side software that sends the print job to the proper server in the format that it requires. Windows XP supports both Windows network print providers and NetWare print providers.

print resolution — A measurement of the number of dots per inch (dpi) that describes the output capabilities of a print device; most laser printers usually produce output at 300 or 600 dpi. In general, the larger the dpi rating for a device, the better looking its output will be (but high-resolution devices cost more than low-resolution ones).

print router — The software component in the Windows XP print subsystem that directs print jobs from one print server to another, or from a client to a remote printer.

print server — A computer that links print devices to the network and shares those devices with client computers on the network.

print spooler — A collection of Windows XP DLLs used to acquire, process, catalog, and dispense print jobs to print devices. The spooler acts like a holding tank, in that it manages an area on disk called the spool file on a print server, where pending print jobs are stored until they've been successfully output. The term "despooling" refers to the process of reading and interpreting what's in a spool file for delivery to a print device.

Print Server services — A collection of named software components on a print server that handles incoming print jobs and forwards them to a print spooler for post-processing and delivery to a print device. These components include support for special job handling that can enable a variety of client computers to send print jobs to a print server for processing.

printer (logical printer) — In Microsoft terminology, a printer is not a physical device, but rather a named system object that communicates between the operating system and some print device. The printer handles the printing process for Windows XP from the time a print command is issued, until a print job has been successfully output. The settings established for a printer in the Add Printer Wizard in the Printers and Faxes applet (Start | Printers and Faxes) indicate which print device (or devices, in the case of a printer pool) will handle print output, and also provide controls over how print jobs will be handled (banner page, special post-processing, and so forth).

printer driver — Special-purpose software components that manage communications between the I/O Manager and a specific print device. Ultimately, printer drivers make it possible for Windows XP to despool print jobs, and send them to a print device for output services.

Modern printer drivers also allow the printer to communicate with Windows XP, and to inform it about print job status, error conditions (out of paper, paper jam, and so forth), and print job problems.

printer graphics driver — The part of the printer driver that renders GDI commands into device driver interface commands that may be sent to the printer.

printer interface driver — The part of the printer driver that provides an interface to the printer settings.

Printer Job Language — A specialized language that provides printer control at the print-job level and enables users to change printer default levels such as number of copies, color, printer languages, and so on.

printer pool — A collection of two or more identically configured print devices to which one or more Windows XP printers direct their print jobs. Basically, a printer pool permits two or more printers to act in concert to handle high-volume printing needs.

printer priority — The setting that helps to determine which printer in a pool will get a given print job. The printer with the higher priority is more likely to get the print job.

process — The primary unit of execution in the Windows XP operating system environment. A process may contain one or more execution threads, all associated with a named user account, SID, and access token. Processes essentially define the container within which individual applications and commands execute under Windows XP.

processor bottleneck — A system bottleneck that occurs when demands for CPU cycles from currently active processes and the operating system cannot be met, usually indicated by high utilization levels or processor queue lengths greater than or equal to two.

product activation — A mechanism by which a product fails if not registered within a specified time period. To be activated, a product must be registered with a correlated product key and hardware signature.

profile — See *user profile*.

public key policy — A security control of Windows XP where recovery agents for EFS and domain-wide and trusted certificate authorities are defined and configured. These policies can be enforced on a user by user basis.

Public Switched Telephone Networks (PSTN) — A global network of interconnected digital and analog communication links originally designed to support voice communication between any two points in the world, but quickly adapted to handle digital data traffic.

PXE (Pre-boot Execution) — A standard environment in PC98-compliant computers and network computers that can be used for a remote OS installation.

queue (print queue) — A series of files stored in sequential order waiting for delivery from a spool file to a print device.

RAID-5 volume (Redundant Array of Inexpensive Disks) — A drive configuration of three or more parts (up to 32) of one or more drives or three or more entire drives (up to 32). Data is written to all drives in equal amounts to spread the workload, and parity information is added to the written data to allow for drive failure recovery. Provides fault tolerance. If one partition or drive fails in the set, the other members can re-create the missing data on the fly. Once the failed member is replaced or repaired, the data on that drive can be rebuilt and restored. This is also known as disk striping with parity (Windows Server products only).

RAW — Device-dependent spool data that is fully ready to be printed when rendered.

real mode — A DOS term that describes a mode of operation for x86 CPUs wherein they can address only 1 MB of memory, broken into 16 64-KB segments, where the lower ten such segments are available to applications (the infamous 640 KB), and the upper six segments are available to the operating system or to special application drivers—or, for Windows XP, to a VDM.

Recovery Console — A command-line interface that provides administrative tools useful for recovering a system that is not booting correctly.

Reg — A special command-line utility that users, programs, or the operating system can use to access, inspect, create, or modify Registry keys.

REG_BINARY — A Registry value entry data type that stores data in binary format.

REG_DWORD — A Registry value entry data type that stores data in binary, hex, or decimal format.

REG_EXPAND_SZ — A Registry value entry data type that stores data in expandable text-string format containing a variable that is replaced by an application when used (for example, *%Systemroot%\File.exe*).

Regedit — The 16-bit Registry editor. Regedit offers global searching and combines all of the keys into a single display. It can be used to perform searches, add new subkeys and value entries, alter the data in value entries, and import and export keys and subkeys.

Registry — The hierarchical database of system configuration data essential to the health and operation of a Windows system.

REG_MULTI_SZ — A Registry value entry data type that stores data in text-string format containing multiple human-readable values separated by null characters.

REG_SZ — A Registry value entry data type that stores data in text-string format.

Remote Access Service (remote access) — The service in Windows XP that allows users to log into the system remotely over phone lines.

remote execution (rexec) — The IP-based utility that permits a user on one machine to execute a program on another machine elsewhere on the network.

Remote Installation Preparation (RIPrep) — A type of installation used with remote OS installation whereby an administrator can take an entire image of one Windows XP Professional machine and install it onto other workstations. That image can include the OS as well as installed applications and configuration settings.

Remote Installation Services (RIS) — An optional service in Windows Server that works with various other services to enable remote installations, including a remote operating system installation.

remote OS installation — A component of Remote Installation Services (RIS) that can install Windows XP Professional on remote-boot-enabled PCs across a network.

remote shell (rsh) — The IP-based utility that permits a user on one machine to enter a shell command on another machine on the network.

removable storage device — Any type of floppy, cartridge, or drive that can be either removed between reboots or as a hot swappable device.

rendering — Graphically creating a print job.

Reverse Address Resolution Protocol (RARP) — The IP protocol used to map from a physical MAC-layer address to a logical IP address.

Scheduled Tasks — The component of Windows XP used to automate the execution or launch of programs and batch files based on time and system conditions.

sector — The smallest division (512 bytes) of a drive's surface.

Secure Socket Layer/Transport Layer Security (SSL/TLS) — A mechanism used primarily over HTTP communications to create an encrypted session link through the exchange of certificates and public encryption keys.

Security Accounts Manager (SAM) — The database of user accounts, group memberships, and security-related settings.

security ID (SID) — A unique number that identifies a logged-on user to the security system. SIDs can identify one user or a group of users.

Security log — Records security-related events.

security options — Defines and controls various security features, functions, and controls of the Windows XP environment.

Sequenced Packet Exchange (SPX) — A connection-oriented protocol used in the NetWare environment when guaranteed delivery is required.

serial — A method of communication that transfers data across a medium one bit at a time, usually adding start and stop bits to ensure reliable delivery.

Serial Line Internet Protocol (**SLIP**) — An implementation of the IP protocol over serial lines. SLIP has been made obsolete by PPP.

server — The networked computer that responds to client requests for network resources.

service — A software element used by the operating system to perform a function. Services include offering resources over the network, accessing resources over the network, print spooling, etc.

service pack — A collection of code replacements, patches, error corrections, new applications, version improvements, or service-specific configuration settings from Microsoft that corrects, replaces, or hides the deficiencies of the original product, preceding service packs, or hot fixes.

setup boot disks (or **floppies)** — The disks used by Windows XP to initiate the installation process on computer systems that do not have an existing OS, do not have a CD-ROM that supports bootable CDs, or do not have network access to a Windows XP distribution file share. These disks can be created by running the MAKEBOOT file from the BOOTDISK directory on the distribution CD.

Setup Manager — The Windows XP tool that provides you with a GUI for creating an answer file.

share — A resource that can be accessed over the network.

shell — The default user process that is launched when a valid account name and password combination is authenticated by the WinLogon process for Windows XP. The default shell of Windows XP is Windows Explorer. The default shell process manages the desktop, Start menu, taskbar, and other interface controls. The shell process defines a logged on user's runtime environment from this point forward, and supplies all spawned processes or commands with its access token to define their access permissions until that account logs out.

Simple Mail Transport Protocol (SMTP) — The IP-based messaging protocol and service that supports most Internet e-mail.

Simple Network Management Protocol (SNMP) — The IP-based network management protocol and service that makes it possible for management applications to poll network devices and permits devices to report on error or alert conditions to such applications.

simple volume — A drive configuration of all or part of a single drive. Does not provide any fault tolerance. NTFS volumes can be extended; FAT and FAT32 volumes cannot be extended.

snap-in — A component that adds control mechanisms to a console for a specific service or object, thereby extending the functionality of that console (as with snap-ins for the MMC).

spanned volume — A drive configuration of two or more parts (up to 32) of one or more drives or two or more entire drives, the elements of the spanned volume do not have to be equal in size. Data is written to the first drive in the volume until it is full, then it continues on with the next drive. It is also called an extended volume. Does not provide any fault tolerance. If one partition or drive in the set fails, all data is lost. Spanned volumes cannot be part of a striped volume or a mirrored volume. NTFS spanned volumes can be extended; FAT and FAT32 spanned volumes cannot be extended. The system partition/volume and boot partition/volume cannot be extended. Volume sets can be reduced in size only by breaking the set and creating a new set. The act of breaking the set destroys all data stored on the volume.

spooling — One of the functions of the print spooler, this is the act of writing the contents of a print job to a file on disk so they will not be lost if the print server is shut down before the job is completed.

striped volume — A drive configuration of two or more parts (up to 32) of one or more drives or two or more entire drives (up to 32). Data is written to all drives in equal amounts (in 64 KB units) to spread the workload and improve performance. Each part or drive must be roughly equal in size. Does not provide any fault tolerance. If one partition or drive in the set fails, all data is lost. Striped volumes cannot be mirrored or extended.

subkey — A division of a Registry key, such as HKEY_LOCAL_MACHINE. A subkey can contain other subkeys and value entries.

subnet — A portion of a network that might or might not be a physically separate network. A subnet shares a network address with other parts of the network but is distinguished by a subnet number.

subnet mask — The number used to define which part of a computer's IP address denotes the host and which part denotes the network.

subsystem — An operating environment that emulates another operating system (such as DOS) to provide support for applications created for that environment.

synchronization object — Any of a special class of objects within the Windows XP environment that are used to synchronize and control access to shared objects and critical sections of code.

SYSPREP — The Windows XP utility used to clone a system.

SYSDIFF — The Windows XP utility used to take a snapshot of a basic installation and, after changes have been made, record the changes and apply them to another installation.

System log — Records information and alerts about Windows XP Professional's internal processes.

System Monitor — The utility that tracks registered system or application objects, where each such object has one or more counters that can be tracked for information about system behavior.

system partition — The partition that is the active partition where the boot files required to display the boot menu and initiate the booting of Windows XP are stored.

System State data — A collection of system-specific data that can be backed up and restored using the Windows XP Backup utility.

Telnet — The TCP/IP-based terminal emulation protocol used on IP-based networks to permit clients on one machine to attach to and operate on another machine on the network as if the other machines were terminals locally attached to a remote host.

thread — In the Windows XP Professional run-time environment, a thread is the minimum unit of system execution and corresponds roughly to a task within an application, the Windows XP kernel, or within some other major system component. Any task that can execute in the background can be considered a thread (for example, run-time spell checking or grammar checking in newer versions of Microsoft Word), but it's important to recognize that applications must be written to take advantage of threading (just as the operating system itself is).

Trace log — A log that records data only when certain events occur. Trace logs record nonconfigurable data from a designated provider when an event occurs.

transaction log — A file created by Windows XP to record Registry changes. These files, with a .log extension, are used to verify that changes to the Registry are made successfully.

transform — A specific type of Microsoft Installer file that usually ends in .mst and that defines changes or customization to an existing Microsoft Installer package, and the .msi file in which the base installer instructions reside. Because most vendors (and Microsoft) define .msi files for their programs and systems, it's often easier to customize an existing .msi file with an .mst transform, rather than defining a new installer package from scratch.

Transmission Control Protocol/Internet Protocol (TCP/IP) — A suite of Internet protocols upon which the global Internet is based. TCP/IP is the default protocol for Windows XP.

Transmission Control Protocol (TCP) — The reliable, connection-oriented IP-based transport protocol that supports many of the most important IP services, including HTTP, SMTP, and FTP.

Trivial File Transport Protocol (TFTP) — A lightweight alternative to FTP, TFTP uses UDP to provide only simple get-and-put capabilities for file transfer on IP-based networks.

unattended installation — A Windows XP installation that uses a script and does not require user interaction.

uniqueness database file (UDF) — A text file that contains a partial set of instructions for installing Windows XP; used to supplement an answer file, when only minor changes are needed that don't require a new answer file.

Universal Naming Convention (UNC) — A multivendor, multiplatform convention for identifying shared resources on a network.

upgrade — The installation method in which data and configuration settings from the previous operating systems remain intact. The level or amount of retained data varies based on the existing operating system's type.

user account — A named security element used by a computer system to identify individuals and to record activity, control access, and retain settings. This entity contains all of the information that defines a user to the Windows XP environment.

User Datagram Protocol (UDP) — A lightweight, connectionless transport protocol used as an alternative to TCP in IP-based environments to supply faster, lower overhead access, primarily (but not exclusively) to local resources.

User Mode — The condition of a console that prevents adding or removing snap-ins or re-saving the console file. Systems running in User Mode are operating in virtual private memory areas for each process, so that each process is protected from all others. User-Mode processes may not manipulate hardware, but must send requests to kernel-mode services to do this manipulation for them.

user profile — A collection of user-specific settings that retain the state of the desktop, Start menu, color scheme, and other environmental aspects across logons.

User Rights Policy — Defines which groups or users can perform the specific privileged action.

value — The actual data stored by a value entry.

value entry — A named Registry variable that stores a specific value or data string. A Registry value entry's name is typically a multiword phrase without spaces and with title capitalization.

virtual device driver (VDD) — A device driver used by virtual DOS machines (VDMs) to provide an interface between the application, which expects to interact with a 16-bit device driver, and the 32-bit device drivers that Windows XP provides.

virtual DOS machine (VDM) — A Win32 application that emulates a DOS environment for use by DOS and Win16 applications.

virtual memory — A Windows XP kernel service that stores memory pages that are not currently in use by the system in a paging file. This frees up memory for other uses. Virtual memory also hides the swapping of memory from applications and higher-level services.

Virtual Memory Manager (VMM) — The part of the operating system that handles process priority and scheduling, providing the ability to preempt executing processes and schedule new processes.

volume — With basic storage, it is a collection of two to 32 partitions into a single logical structure. With dynamic storage, it is any division of a physical drive or collection of divisions into a drive configuration.

wide area network (**WAN**) — A geographically dispersed network of networks connected by routers and communications links. The Internet is the largest WAN.

Win16 — The collection of components, interfaces, and capabilities that permits Win16 applications to run within a VDM within the Win32 subsystem on Windows XP.

Win16-on-Win32 (WOW) VDM — The formal name for the collection of components, interfaces, and capabilities that permits the Win32 subsystem to provide native support for well-behaved 16-bit Windows applications.

Win32 — The main 32-bit subsystem used by Win32 applications and other application subsystems.

Windows Installer Service (WIS) — A Windows XP component that manages the installation and removal of applications by applying a set of centrally defined setup rules during the installation process.

Windows Internet Name Service (WINS) — Service that provides NetBIOS-name-to-IP-address resolution.

WinLogon — The process used by Windows XP to control user authentication and manage the logon process. WinLogon produces the logon dialog box where user name, password, and domain are selected, controls automated logon, warning text, the display of the shutdown button, and the display of the last user to log onto the system.

WINNT — The 16-bit Windows XP installation program.

WINNT32 — The 32-bit Windows XP installation program.

Wizard — A tool or utility that has an interactive step-by-step guide to walk you through a complex or detailed configuration process.

workgroup — A networking scheme in which resources, administration, and security are distributed throughout the network.

workgroup model — The networking setup in which users are managed jointly through the use of workgroups to which users are assigned.

X.25 — A standard that defines packet-switching networks.